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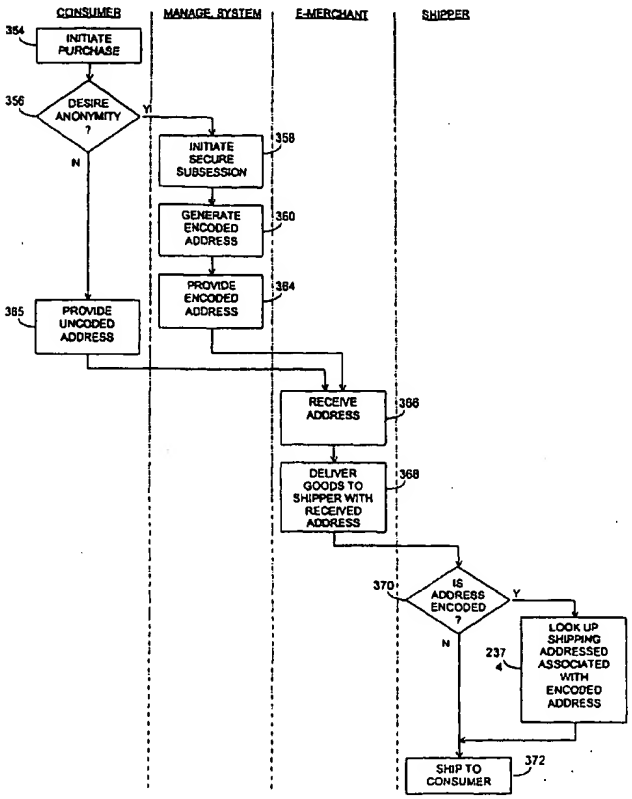
(54) Title: METHODS FOR MANAGING TRANSACTIONS ON THE INTERNET WITH ANONYMOUS SHIPPING ADDRESSES



(57) Abstract: A method of managing a transaction on the Internet between a consumer and an e-merchant in which the actual shipping address of the consumer is not provided to the merchant. When a consumer initiates a purchase with an e-merchant, if anonymity is desired, the consumer causes a management system to generate an encoded address. The encoded address may be a unique address code stored in a database in the management system and is associated with the actual shipping address of the consumer. The encoded address is provided to the e-merchant. The e-merchant may then prepare the goods for shipping and deliver the packaged goods to a shipper with the encoded address. The shipper then determines whether the address on the packaged goods is an encoded address or an actual shipping address. If the address is encoded, then the shipper may retrieve the actual shipping address associated with the encoded address from a database. Once the actual shipping address is obtained, the goods may be shipped to the consumer.

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METHODS FOR MANAGING TRANSACTIONS ON THE INTERNET WITH ANONYMOUS SHIPPING ADDRESSES

CROSS-REFERENCE TO RELATED APPLICATIONS

The present application claims priority on U.S. Provisional Application for Patent No. 60/189,287 filed March 14, 2000, and is a continuation-in-part (CIP) application of U.S. Patent Application Serial No. 09/772,169, filed January 29, 2001, which application is a CIP of U.S. Patent Application Serial Nos. 09/753,129 and 09/753,274 filed December 30, 2000, each of which is a CIP application of U.S. Patent Application Serial No. 09/644,109 filed August 21, 2000, the entire disclosure of each of which is incorporated herein by reference.

FIELD OF THE INVENTION

The present invention relates to the electronic commerce over a communication network such as the Internet and, more specifically, to systems for securely exchanging monetary value for goods and services purchased over the Internet. The present invention relates to systems and associated methodology for managing economic exchange between merchants and consumers anonymously and without a consumer providing an actual shipping address to a merchant.

BACKGROUND OF THE INVENTION

With the advent and looming dominance of the Internet in today's consumer market, conventional currency transactions between consumers and merchants have been redefined. Gone are the days of exclusive cash, check, or credit card transactions. Financial institutions and web merchants have had to develop new transaction techniques to ensure the integrity of the transaction and to maintain the privacy of the consumer.

Automation has achieved some of these qualities for large transactions through computerized electronic funds transfer (EFT) systems. Electronic funds transfer is essentially a process of value exchange achieved through a banking system's centralized computer transactions. EFT services are a transfer of payments utilizing electronic checks, which are used primarily by large commercial organizations.

Examples of EFT systems utilized by retail and commercial organizations include an automated clearing house (ACH) where a user can enter a pre-authorized code and download information with billing occurring later, and a point-of-sale (POS) system where a transaction is processed by connecting with a central computer for authorization for the transaction granted or

denied immediately. However, the payments made through these types of EFT systems are limited in that they cannot be performed without the banking system. Current EFT systems, credit cards, or debit cards, which are used in conjunction with an on-line system to transfer money between accounts, such as between the account of a merchant and that of a customer, cannot satisfy the need for an automated transaction system providing an ergonomic interface.

To implement an automated, convenient transaction that can dispense some form of economic value, there has been a trend towards off-line payments. For example, numerous ideas have been proposed for some form of electronic money that can be used in cashless payment transactions as alternatives to the traditional currency and check types of payment systems. See, for example, U.S. Patent No. 4,977,595, entitled "Method and Apparatus for Implementing Electronic Cash," and U.S. Patent No. 4,305,059, entitled "Modular Funds Transfer System." Other techniques for automated transactions include magnetic stripe cards purchased for a given amount and from which a prepaid value can be deducted for specific purposes. Other examples include memory cards or so called smart cards which are capable of repetitively storing information representing value that is likewise deducted for specific purposes.

In an electronic environment, it is desirable for a computer operated under the control of a merchant to obtain information offered by a customer and transmitted by a computer operating under the control of the customer over a publicly accessible packet-switched network (e.g., the Internet) to the computer operating under the control of the merchant, without risking the exposure of the information to interception by third parties that have access to the network, and to assure that the information is from an authentic source. It is further desirable for the payment processing to be flexible and able to negotiate with the client customer to select a mutually acceptable payment protocol and other payment options.

One such attempt to provide a secure transmission channel is a secure payment technology known as the Secure Electronic Transaction (SET), jointly developed by the Visa and MasterCard card associations. Other such secure payment technologies include Secure Transaction Technology (STT), Secure Electronic Payments Protocol (SEPP), Internet Keyed Payments (iKP), Net Trust, and Cybercash Credit Payment Protocol. Such secure payment technologies require the customer to operate software that is compliant with the secure payment technology, interacting with third-party certification authorities, thereby allowing the customer to transmit encoded information to a merchant, some of which may be decoded by the merchant, and some which can be decoded only by a payment gateway specified by the customer.

Another attempt to provide a secure transmission channel is a general-purpose secure communication protocol known as Secure Sockets Layer (SSL) developed by Netscape, Inc. SSL provides a means for secure transmission between two computers. SSL has the advantage that it does not require special-purpose software to be installed on the customer's computer because it is already incorporated into widely available software that many people utilize as their standard Internet access medium, and does not require that the customer interact with any third-party certification authority. Instead, the support for SSL may be incorporated into software already in use by the customer, e.g., the Netscape Navigator browser. However, although a computer on an SSL connection may initiate a second SSL connection to another computer, a drawback to the SSL approach is each SSL connection supports only a two-computer connection. Therefore, SSL does not provide a mechanism for transmitting encoded information to a merchant for retransmission to a payment gateway such that a subset of the information is readable to the payment gateway but not to the merchant. Although SSL allows for robustly secure two-party data transmission, it does not meet the ultimate need of the electronic commerce market for robustly secure three-party data transmission. Other examples of general-purpose secure communication protocols include Private Communications Technology (PCT) from Microsoft, Inc., Secure HyperText Transport Protocol (SHTTP) from Theresa Systems.

Internet-based payment solutions require security measures that are not found in conventional point-of-sale (POS) terminals. This additional requirement is necessitated because Internet communication is done over publicly accessible, unsecured communication lines, which is in stark contrast to the private, secure, dedicated phone or leased line service utilized between a traditional merchant and an acquiring bank. Thus, it is critical that any solution utilizing the Internet for a communication backbone employ some form of cryptography.

Prepaid instruments in use today are a variant of one of (or combination of several of) the following devices: prepaid phone and access cards, debit cards, and money orders and gift certificates. Most Debit Cards are predicated on a credit system or linked to an existing bank account. Internet purchase schemes are predominantly credit systems. In addition, a number of on-line purchase schemes utilize an electronic wallet that is filled (i.e., funded) and refilled from a credit source. This is synonymous to certain toll-road systems that debit a credit account periodically to pay in advance for toll road use that is often electronically sensed. Internet purchasing schemes to date are all credit or bank account based due to the inability to collect cash over the wire.

In view of the foregoing, there remains a need in the art for systems for managing financial transactions over the Internet in an efficient and versatile manner.

BRIEF SUMMARY OF THE INVENTION

The present invention provides methods for managing transactions over the Internet in which a consumer does not need to provide an actual shipping address to a merchant. Accordingly, the consumer maintains a level of anonymity not possible by using, for example, a post office box.

According to one aspect of the present invention, when a consumer initiates a purchase with an e-merchant, if anonymity is desired, the consumer may cause a management system to generate an encoded address. The encoded address may be a unique address code stored in a database in the management system and is associated with the actual shipping address of the consumer. The encoded address may be based on consumer input and/or encrypted information. Preferably, the encoded address includes the ZIP code of the actual shipping address of the consumer so that the merchant may calculate actual shipping charges.

Once generated, the encoded address is provided to the e-merchant. Accordingly, the e-merchant does not receive or know the consumer's actual shipping address. The e-merchant may then prepare the goods for shipping and deliver the packaged goods to a shipper with the encoded address. The shipper may be, for example, the U.S. Postal Service, United Parcel Service, FedEx, and so on.

The shipper then determines whether the address on the packaged goods is an encoded address or an actual shipping address. If the address is encoded, then the shipper may look up the actual shipping address associated with the encoded address. This may be accomplished by the shipper querying the management system which, in turn, may retrieve the actual shipping address in a database and then transmit the same to the shipper. Alternatively, the management system may provide the shipper with the encoded address and the actual shipping address after the encoded address is first generated. The shipper may store the encoded address and associated actual shipping address in a database and maintain the database of a plurality of encoded addresses and associated actual shipping addresses for future use. In either case, once the actual shipping address is obtained, the goods may be shipped.

Other aspects, features, and advantages of the present invention will become apparent to those skilled in the art from a consideration of the following detailed description taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

FIG. **1** is a block diagram of an exemplary e-commerce system according to the present invention in which prepaid monetary instruments are utilized by a system for managing transactions between consumers and e-merchants;

FIG. **2** is a schematic representation of a prepaid monetary instrument configured according to a preferred embodiment of the invention;

FIG. **3** is a flow chart illustrating exemplary methodology for managing anonymous transactions over a network with prepaid monetary instruments in accordance with the present invention;

FIG. **4** is a block diagram of an management system configured in accordance with an exemplary embodiment of the present invention;

FIGS. **5A** and **5B** are a schematic representations of Internet activation browser windows exemplifying principles of the present invention;

FIG. **6** is a schematic representation of an e-merchant verification browser window exemplifying principles of the present invention;

FIG. **7** is a block diagram of an exemplary e-commerce system according to the present invention in which transactions between consumers and merchants are carried out by proxy;

FIG. **8** is a flow chart illustrating exemplary methodology for managing transactions over the Internet by proxy in accordance with the present invention;

FIG. **9** is a schematic representation of a proxy payment browser window exemplifying principles of the present invention;

FIG. **10** is a flow chart illustrating exemplary methodology for managing check and money order transactions over the Internet in accordance with the present invention;

FIG. **11** is a flow chart illustrating exemplary methodology for managing transactions over the Internet by single-use credit-card numbers, or surrogate numbers, in accordance with a preferred embodiment of the present invention, particularly managing such transactions by proxy;

FIG. **12** is a flow chart illustrating exemplary methodology for managing transactions with surrogate numbers in accordance with an alternative embodiment of the invention;

FIG. **13** is a flow chart illustrating exemplary methodology for managing transactions without a consumer providing an actual shipping address to an e-merchant; and

FIG. **14** is a block diagram illustrating exemplary encoded address of the invention.

DETAILED DESCRIPTION OF THE INVENTION

The present invention provides in general apparatus and associated methodology for managing transactions between consumers and merchants over the Internet. These apparatus and methods include plural preferred embodiments, a number of which are described below. Those skilled in the art will appreciate that the following description provides foundation for many other embodiments that fall within the broad principles of the present invention as set forth in the appended claims.

Anonymous Transactions

Referring more particularly to the drawings, an exemplary embodiment of an e-commerce system according to the present invention is shown in FIG. **1** and is indicated generally by reference numeral **50**. Exemplary e-commerce system **50** includes a management system **52** that is configured to allow anonymous transactions to take place between consumers **54** and merchants **56** over a network **58** such as the Internet. More specifically, through the use of prepaid monetary instruments purchased at one or more distributors **60**, exemplary management system **52** enable consumers **54** to purchase goods and services from the merchants **56** with complete anonymity. In addition, exemplary management system **52** guarantees that the merchants **56** receive funds for goods and services provided without the drawbacks of conventional financial-transaction instruments such as credit cards. In a preferred embodiment, the management system **52** of the present invention provides cash-like and real-time transactions for purchases made on the Internet.

An example of a prepaid monetary instrument configured in accordance with the present invention is illustrated in FIG. **2** and is indicated by reference numeral **62**. Exemplary instrument **62** includes information specific thereto, for example, a denomination or monetary value **64** and a security code **66** such as a serial number. In a preferred embodiment, exemplary instrument **62** may include one or more enablement means, such as a barcode **72** and/or a magnetic strip **74**, which will be discussed in more detail below. Preferably, the instrument **62** of the present invention also includes an area **76** for graphics and text. Although any tangible form may be used, exemplary instrument **62** is preferably configured on a card-like body **78** for easy transport and familiarity. Exemplary instrument **62** may be preprinted or, alternatively, may have the monetary value **64** and the security code **66** printed at the time and place of the sale.

With further reference to FIG. **1**, to place the principles of the invention in context, exemplary e-commerce system **50** generally includes a plurality of consumers **54a, 54b, 54c, ...,**

54*k* each with access to a computer **80a, 80b, 80c, ..., 80*l*** connected to the network **58**. Each consumer **54** has direct access to a plurality of distributors **60a, 60b, 60c, ..., 60*m*** of the instruments **62** and network access via a respective computer **80** to the management system **52** and a plurality of participating web merchants **56a, 56b, 56c, ..., 56*n***. The network **58** may include the Internet **81** and an instrument services network **82**, which is discussed in more detail below.

With additional reference to FIG. **3**, each consumer **54** purchases an instrument **62** from any one of the distributors **60** (step **83**). The plurality of distributors **60** may include retail establishments, convenience stores, department stores, post offices, dedicated kiosks, and so on. In addition, the plurality of distributors **60** may include unattended devices, such as vending machines. The distributor **60** making the sale of the instrument **62** receives funds (step **84**) from the consumer **54** in the amount of a desired monetary value **64**. An additional service charge may be added in the sale of the instrument **62**.

The distributor **60** then enables the instrument **62** (step **86**), which may be accomplished in any number of ways. For example, the barcode **72** may be optically scanned, or the magnetic strip **74** may be swiped through a reader such as a standard Verafone® interface. By enabling the instrument **62**, the information specific thereto, i.e., the monetary value **64** and the security code **66**, is transmitted via the network **58** to the management system **52** (step **88**). The enablement of the instrument **62** preferably takes place across the instrument services network **82** of the system network **58**.

Referencing FIG. **4**, the information transmitted by the distributor **60** is received by the management system **52** (step **90**) at an instrument services gateway **92** which, in turn, sends the information to an enablement processor **94** which triggers an electronic transfer of funds (step **96**). The distributor **60** electronically transfers funds (step **98**) to the management system **52**, and an enabled account is established (step **100**) for the instrument **62** via an enablement application program interface (API) **102**. Enablement of an instrument **62** changes an account specific to the instrument from a pending status to an enabled status. Data associated with instruments **62** with accounts having an enabled status (i.e., enabled accounts) may be stored on an instruments data structure **104**, and data associated with the transfer of funds from the distributors **60** may be stored on a distributor data structure **106**. In alternative embodiments, the distributor **60** may provide the monetary value **64** of the instrument **62**, and the management system **52** may confirm the enablement of the instrument **62** with the distributor **60** and verify the monetary value **64**.

A consumer **54** with an enabled instrument **62** then needs to activate the instrument **62** (step **108**). To do so, the consumer **54** accesses an activation website (step **110**) with a computer **80**. The activation website may be part of a general customer website **112** maintained by the management system **52**. Alternatively, the activation website may be a frame within a website of a distributor. Referencing FIG. **5A**, a first activation window **114** is displayed on the consumer's computer **80** which prompts the consumer **54** for the security code **66** of the instrument **62** (step **116**). The first activation window **114** may include fields for this information, as indicated by reference numeral **118**. The consumer **54** may then activate a SUBMIT icon **120** to provide the security code **66** to the management system **52** (step **122**).

Upon receipt of the security code **66**, the management system **52** causes a second activation window **124** as shown in FIG. **5B** to be displayed on the consumer's computer **80** which prompts the consumer **54** for a user ID and a password (step **125**). The second activation window **124** may include fields for this information, as indicated by reference numerals **126** and **127**, respectively. In a preferred embodiment, the second activation window **124** also includes fields for prompting the consumer for a challenge phrase and a challenge response, as indicated by reference numerals **128** and **129**, respectively, which will be discussed in more detail below. Upon entering the requested information, the consumer **54** may then activate a SUBMIT icon **130** to provide the user ID and the password to the management system **52** (step **131**).

The management system **52** receives the user ID and the password by an account activator **132**, as shown in FIG. **4**. Through an activation API **134**, the enabled account associated with the instrument **62** is activated (step **136**); that is, the enabled status of the account is changed to an active status. Data associated with the activated account of the instrument **62** may be stored on an active accounts data structure **138**.

With the account associated with an instrument **62** activated, a consumer **54** is free to shop on-line at any merchant with a website connected to the network **58** and set up to accept payment with the instrument **62** of the present invention. To do so, the consumer **54** accesses a merchant website (step **140**) to shop for goods and services. When the consumer **54** has decided upon a desired selection of goods and/or services, a purchase is initiated (step **142**) from the merchant's website. When a purchase is initiated, the merchant **56** preferably redirects the consumer **54** to the management system **52** (step **143**). A secure handshake between the customer **54** and the management system **52** may be established.

Referencing FIG. **6**, when the purchase is initiated, a verification window **144** may be

displayed on the consumer's computer **80** which prompts the consumer **54** for the user ID and the password (step **146**). The verification window **144** may include fields for this information, as indicated by reference numerals **148** and **149**, respectively. In alternative embodiments, for example, if a secure handshake is not established, the verification window **144** may also include a field for prompting the consumer for the challenge phrase and the challenge response, similar to that shown in FIG. **5B**. This is particularly useful as added security if a prepaid instrument **62** is lost or stolen, or if the consumer is utilizing a computer **80** other than that used to activate the account associated with the prepaid instrument. The consumer **54** may then activate a SUBMIT icon **152** to provide the user ID and the password to the management system **52** (step **154**).

Upon receiving the user ID and the password, the management system **52** generates and transmits a query to a transaction engine **160**. Upon receipt of the query , the transaction engine **160** validates the user ID and the password and correlates this information with active account information in the active account data structure **138** through a prepaid transaction API **164**. The funds in the account are then verified (step **166**). A funds signal is generated and transmit (step **168**) to the merchant **56**. The funds signal contains information indicative of whether or not sufficient funds are in the account to cover the purchase.

Upon receipt of the funds signal (step **170**), the merchant **56** proceeds with the transaction if sufficient funds are available (step **172**). If sufficient funds are not available, the management system **52** may query the customer **54** for alternative or addition payment options, such as a credit card to cover the deficit. The merchant **56** then transmits a verification (step **174**) to the customer **54** that the transaction has taken place. Upon receipt of the verification (step **176**), the customer **54** may continue shopping with the instrument **62** if funds remain in the account (step **178**).

Upon completing the transaction, the merchant **56** may send a purchase signal (step **180**) to the management system **52** which, upon receipt (step **182**), debits the account (step **184**) of the instrument **62** associated with the transaction. The management system **52** may then transfer funds (step **186**) to the merchant which, upon their receipt (step **188**), completes the anonymous transaction between the customer **54** and the merchant **56**. The amount of funds transferred to the merchant **56** is based upon the purchase price and may be reduced by a service charge of the management system. Alternatively, the management system **52** may debit the account of the prepaid instrument **62** prior to transmitting the funds signal in step **168**.

One of the advantages of the management system **52** of the present invention is that

purchases made by a customer may be batched or pre-authorized. According to this feature of the invention, a merchant **56** batches multiple purchases made during a single on-line session with a consumer **54**. To do so, an advance is established by completing a secure handshake between the merchant **56** and the management system **52** and between the merchant **56** and the consumer **54**. When the shopping session is complete, the total amount is communicated to the management system **52** and the consumer **54** to finalize the transaction. This embodiment is particularly useful for merchants who specialize as content or information providers. Such merchants require micropayments for various informational units. Micropayments are small payments that are not suitable for credit-based purchase schemes, examples of which include $0.25 for a download of a piece of intellectual property and $1.50 for two viewing/use rights for an on-line service such as financial information from a financial website.

In a preferred embodiment, exemplary management system **52** is configured to allow the combining of the accounts of multiple instruments into a single account. For example, if a single consumer **54** has purchased several instruments and has used these instruments such that a small balance remains in the account of each, then the consumer **54** may combine these multiple accounts into a single account that can be used analogously to a new account. In other words, Account 1 through Account x may be combined into Account x+1. Accounts 1 through x would then be empty and marked idle.

This account combination feature of the management system **52** may be carried out by a customer query handler **190** and an account services API **192**. A data structure **194** dedicated to quiet and closed accounts may be provided to house data associated with the accounts comprising the combined account. In addition to combining accounts, customer query handler **190** may be configured to enable a consumer to move or transfer funds from one account to another.

Conversely to the combination of accounts, the management system **52** of the present invention may be configured to allow the parsing or splitting of one account into several accounts. Parsing provides an effective way to disperse of a remaining balance in an account, and may be carried out by the customer query handler **190**.

The management system **52** of the present invention may also include a data structure **196** for housing data relevant to each of the merchants **56** of the network **50**. In doing so, the management system **52** may organize the merchant **56** into categories according to, for example, the type of goods or services being sold, the target consumer (e.g., teens, adult only, etc.), and the

type of offerings (e.g., information, soft services, or hard goods). By classifying the merchants **56** in an object class library structure, the process of adding and grouping new merchants **56** is greatly simplified. This classification enables the creation of prepaid monetary instruments **62** that are valid only at certain specifiable classes of merchants **56**.

For example, one of the most useful such class of merchants **56** would be suitable for preteens and teens. Accordingly, a "card for minors" may be enabled that is restricted to merchants **56** that have been so categorized. As new merchants **56** come on-line and meet the qualifications, they may be added to this category of merchants and available to the "cards for minors," as well as to all newly issued cards.

This categorization of merchants **56** is preferably monitored and maintained current. If an existing participating merchant changes its offerings goods and/or services in such a way that it would change its categorization, then such a change may be detected and updated for existing accounts, as well as new accounts. This monitoring and updating may be accomplished by the combination of the object class library classification and an automated "web crawling" of each merchant **56**. This form of electronic inspection may be performed periodically (e.g., daily) against all participating merchants **56**. The activated instruments **62** may then be enabled or disabled according to the current classes of merchants **56**.

With further reference to FIG. **4**, exemplary management system **52** may also provide a website **198** for access by the merchant **56** of the system **50**. A merchant query handler **200** and a merchant SVC **202** in communication with the merchant data structure **196** may be configured to handle queries from merchants **56** as to status of there respective accounts with the system.

The accounts of the management system **52** may be classified according to status. For example, accounts may be allocated by the security codes or a block of security codes to a particular distributor **60**. The allocation of accounts within the management system **52** allows a distributor **60** to design and manufacture unique instruments **62**. A pending account indicates an account that is on-line in the system **52** and awaiting enablement. An enabled account, as discussed above, indicates that the account has been purchased and enabled and is awaiting activation. An activated account, also as discussed above, indicates that the account has been activated by the consumer **54** on the customer website **112**.

An account may acquire a quiet status if the account balance goes to zero (or effective zero) and/or has seen not activity for a predetermined amount of time, for example, three months. In addition, an account may acquire a complete status if the account has been quiet for an

extended predetermined amount of time, for example, at least 24 months with a balance or six months with no effective balance. The active accounts data structure **138** and the quiet/closed accounts data structure **194** may include data related to each of these accounts.

According to transaction-management methodology of the present invention, the enablement processor **94** processing a signal from a distributor **60** received via the network **58**. The signal from the distributor **60** includes the information, i.e., the monetary value **64** and the security code **66**, of the prepaid instrument **62**. The enablement processor **94** then causes an account associated with the prepaid instrument to be enabled based upon the information. The account activator **132** then receives a signal from a customer **54** via the network **58**. The signal from the customer **54** includes at least the security code, the user ID, and the password. The account activator **132** then causes the enabled account associated with the security code to be activated in association with the user ID and the password. The transaction engine **160** then processes a signal from including information regarding a purchase and a password. The transaction engine **160** causes a verification of funds in the active account associated with the received user ID and password and causes a signal to be generated and transmitted to the merchant **56** as to whether the account associated with the password has sufficient funds to cover the purchase. The transaction engine **160** then receives and processes a second signal from the merchant **56**, with the second signal including information indicative of whether the purchase took place. The transaction engine **160** causes funds to be transferred to the merchant **56** based upon a value of the purchase.

The foregoing methodology may be implemented in software modules including a plurality of code segments. For example, the software may include code segments for processing the signal from the distributor and for enabling the account associated with the prepaid instrument **62** in the enablement processor **94**. Other code segments may be configured to activate the account and associate the account with a user ID and a password received by the account activator **132**. Additional code segments may be configured for processing the signal from the merchant **56** to the transaction engine **160**, including code segments for prompting the consumer for the user ID and the password associated with the instrument, for verifying sufficient funds, for generating the signal, and for causing the signal to be transmitted to the merchant as to the same. The software may also include other code segments for processing the second signal from the merchant **56** and for causing funds to be transferred to the merchant based upon a value of the purchase.

Proxy Transactions

A preferred embodiment of an e-commerce system of the present invention is illustrated in FIG. 7 and indicated generally with reference numeral **250**. Exemplary e-commerce system **250** includes a proxy management system **252** for managing transactions between a consumer **54** and a merchant **56** by proxy. Exemplary proxy system **252** includes a proxy server **254** and a portal web site **256**. The proxy server **254** is configured to be accessible to the consumer **54** by a computer **80** with a web browser **257** and to one or more merchant servers **258** via the Internet **81**. Each merchant server **258** is configured to host one or more merchant web sites **118**. The portal web site **256** may be hosted by the proxy server **254** if desired or, alternatively, by another server, such as a portal server **259** or a server of a distributor as discussed above. For clarity, only a single consumer and merchant are shown in FIG. 7, although a plurality of each are contemplated analogous to that shown in FIG. 1.

According to the present invention, the consumer **54** is able to carry out transactions with the merchant **56** without needing to access the merchant server **258** directly. Such a proxy system has a number of advantages. For example, analogous to that described above, the consumer **54** may establish a prepaid account with the proxy management system **252** and then use funds in the prepaid account to carry out transactions with merchants **56**. In addition, with prepaid accounts, the consumer **54** need not be concerned with the payment modes (i.e., credit card, check, money order, etc.) of each merchant **56**, because the proxy server **254** acts as a middleman between the consumer **54** and the merchant **56**. In other words, regardless of the modes of payment accepted by the merchant **56**, the consumer **54** may use any type of desired mode of payment, and vice-verse.

With additional reference to FIG. 8, to carry out a transaction by proxy, a consumer **54** first accesses the portal web site **256** with a computer **80** (step **260**), which site is hosted by a server other than that of the merchant server **258**, e.g., the portal server **259**. The consumer **54** may then access any merchant web site **118** (step **264**) via the portal web site **256**, e.g., by clicking on a link on the browser **257**. This causes the server hosting the portal web site **256** to communicate with the proxy server **254** to request the desired merchant web site. The proxy server **254** then connects with the merchant server **258** (step **266**) hosting the desired merchant web site **118** (step **268**), and retrieves the merchant web site **118** (step **270**). The merchant web site **118** is now presented to the browser **257** of the consumer **54**. This may be accomplished by the proxy server **254** first parsing the merchant web site **118** and then sending web pages of the

site **118** to the browser **257**. The consumer **54** may now view the merchant web site **118** (step **271**).

The proxy server **254** is configured so that the consumer **54** is able to view, navigate, and browse the merchant web site **118** (step **272**) within the portal web site **256** via the proxy server **254** as though the consumer computer **80** were connected directly to the merchant server **258**. In addition, the proxy server **254** is configured to modify and update the merchant web site **118** (step **274**) in real time in response to browsing by the consumer **54** which, for the purposes of this description, is called "mapping." For example, as the consumer **54** activates links within a web page of the merchant web site **118**, the proxy server **254** presents the new links as provided by merchant server **258** (step **275**) by parsing the merchant web site **118** in real time. The web pages associated with the activated links are then mapped to the browser **257** on the consumer's computer **80**.

When the consumer **54** initiates a transaction (step **276**), the proxy server **254** captures payment information (step **277**) provided by the merchant **56** (step (**278**), which information may include price, tax, shipping and handling costs, and so on. The proxy server **254** then provides a proxy payment page or window (step **280**) to the browser **257**, an example of which is shown in FIG. **9** and indicated by reference numeral **282**. Exemplary proxy payment page **282** may include a number of payment fields, for example, a mode of payment field **284** and a shipping field **286**, and a submit icon **288**. To carry out the transaction, the consumer **54** completes the necessary payment fields and submits the information to the proxy server **254** (step **290**).

The proxy server **254** then secures funds (step **292**) in accordance with the mode of payment **284** selected by the consumer **54**. For example, if the selected mode of payment was a credit card, then the proxy server **254** may present the consumer **54** with a web page that secures funds by credit card as known in the art. Alternatively, if the selected mode of payment was a prepaid account as described above, then the proxy server **254** may present the consumer **54** with a verification window **144** as shown in FIG. **6**, with the funds for the transaction being thereafter debited from the prepaid account.

Upon securing funds for the transaction, the proxy server **254** may then verify the mode of payment accepted by the merchant **56** (step **294**). For example, if the merchant **56** has an existing relationship with the proxy management system **252**, then funds can be transferred to the merchant (step **295**) in accordance with a predetermined agreement or analogous to that described above. Alternatively, if the merchant **56** only accepts credit card payments, then the

proxy server **254** may initiate a credit card transfer as known in the art. Additionally, funds may be transferred with conventional bank transfers. Moreover, the proxy server **254** may be configured to transfer funds to the merchant **56** in the form of a check or a money order, as described in more detail below.

Upon receipt of the funds and any other payment information, e.g., shipping address (step **296**), the merchant **56** may then transmit a verification signal (step **297**) to the proxy server **254**. In turn, the proxy server **254** may transmit a payment confirmation web page or e-mail (step **298**) which is received by the consumer's computer **80** (step **299**).

As valid payment has been made, fulfillment of the transaction is carried out, including the merchant **56** providing the goods or services of the transaction (step **301**) to the consumer (step **302**). The merchant **56** may also provide a service fee to the proxy management system **252** (step **303**) for acting a middleman in the transaction, such as an affiliate fee. The consumer **54** may also continue to access merchant web sites (step **304**) as desired.

In addition to the advantages described above, the proxy management system **252** acts as a payment middleman in handling a transaction between the consumer **54** and the merchant **56**. The proxy server **254** may be configured to accept many different types of payment methods, as well as payment methods yet to be developed, without requiring the merchant web site **118** to be constantly updated to accept new and different payment methods. In addition, the billing and payment information of the consumer **54** remains anonymous to the merchant **56** because the proxy server **254** acts as a broker in the transaction, thereby shielding each party from the other party's mode of payment. Therefore, while acting as a broker in the transaction, the proxy server **254** creates a seamless transaction for both the consumer **54** and the merchant **56**.

In an embodiment of the invention in which the consumer **54** utilizes a prepaid account, shipping address information may be automatically taken from account information previously supplied by the consumer **54**. Other fields in the payment window **282** may be left enabled for the consumer **54** to complete.

Single-Use Financial Instrument Transactions

As mentioned above, the proxy management system **252** may determine the preferred payment method of a merchant **56** and then transfer funds to the merchant according to that preference. If the preferred payment mode of the merchant **56** is a check, then, according to conventional systems, the consumer **54** would need to write out a check, send the check to the merchant by mail, and then wait for the check to clear before the goods or services are delivered.

If the preferred payment mode of the merchant **56** is a money order, then, according to conventional systems, the consumer **54** would need to purchase a money order from a financial institution, pay a service charge for doing so, and send the money order to the merchant by mail. While checks and money orders are often preferred by many merchants because of the absence of finance charges at their end, clearly both of these conventional approaches have disadvantages to the consumer. For the purposes of this description, check, money orders, and one-time user credit card numbers will be referred to generically as "single-use financial instruments." According to the present invention, the disadvantages to the consumer associated with such instruments, particularly checks and money orders, are substantially eliminated.

Referencing FIG. **10**, as mentioned above, the proxy server **254** may be configured to determine the merchant payment mode (step **294**). If such determination yield check or money order (step **308**), then the proxy server **254** may capture a merchant payment form from the merchant web site **118** (step **310**). In addition, the proxy server **254** secures funds from the consumer **54** as described above (step **292**), which funds do not need to be in the form of a check or money order. The proxy server **254** then causes the management system **252** to generate a check or a money order (step **312**), depending upon the merchant's preference, and then to transmit the check or money order to the merchant **56** (step **314**). Accordingly, the proxy management system **252** acts as a payment middleman to provide a seamless transaction regardless of the method of payment at either end of the transaction. In other words, both the consumer **54** and the merchant **56** are able to participate in the transaction utilizing their preferred financial instruments.

More generally, in many embodiments, the consumer **54** will access a merchant web site **118** directly, without first accessing a portal web site **256** and then browsing the merchant web site **118** via the proxy server **254** as described above. In such an embodiment without a proxy server, if the acceptable modes of payment for the merchant **56** include only single-use financial instruments, then the consumer **54** may be burdened to initiate and complete a transaction not according to his or her favored mode of payment. However, according to the present invention, a merchant web site **118** indicates that a single-use financial instrument (e.g., a check or a money order) is the accepted mode of payment, then the consumer **54** may initiate an application on the computer **80** to generate and transfer to the merchant a single-use financial instrument.

For example, if the merchant **56** only accepts checks or money orders, the consumer **54** may initiate an application from the computer to cause the management system **52** or **252** to

capture payment information from the merchant web page **118** and then to generate a single-use financial instrument for the transaction. Once generated, the instrument is transferred to the merchant as though being transferred by the customer **54**. Accordingly, as described above, the transaction is seamless to the merchant **54** and allows both parties to partake in transactions on the Internet according to their preferred mode of payment.

As mentioned, the customer **54** does not need to access the proxy server **254** to carry out a transaction with a single-use financial instrument. However, if preferred, the customer **54** may access the proxy server **254** and complete the transaction with the consumer's preferred mode of payment, such as using a credit card or a prepaid account as discussed above. The proxy server **254** may then generate a check or a money order for the transaction and transmit the check or money order to the merchant. Accordingly, the consumer pays funds as desired, and the merchant receives funds as desired. The merchant web page **118** may include a link to the proxy server **254** which, when activated, enables the consumer to complete the transaction utilizing a mode of payment different than that accepted by the merchant.

Surrogate Credit-Card Transactions

According to the present invention, a single-use credit-card number may be generated from a prepaid account for payment of a transaction on the Internet between a consumer and a merchant. For the purposes of this description, the single-use credit-card number will be called a *surrogate number* and, according to a preferred embodiment, may have a fixed amount and a fixed expiration date. The surrogate number may be generated from a credit card of the management system. The amount that is assigned or allocated to the surrogate number may be deducted from the consumer's prepaid account.

Payment with surrogate numbers has multiple applications. For example, the proxy management system **252** shown in FIG. **7** may generate a single-use surrogate number to be used by a consumer **54** for completing a transaction over the Internet **81** with a merchant **56**. With reference to FIG. **11**, when a consumer **54** initiates a transaction through the proxy management system **252**, the proxy server **254** captures and receives the merchant payment information (see steps **277** and **278** of FIG. **8**), and then generates a surrogate number (step **320**) based on the payment information. The surrogate number may be generated in an amount equal to the purchase price provided by the merchant in the payment information. Alternatively, the surrogate number may include an additional service fee charged to the consumer. In addition, a surrogate number may be generated with a fixed expiration date, for example, within a

predetermined amount of time (such as 24 hours) of generating the surrogate number.

Payment information is then provided to the consumer **54** (step **322**), who is prompted to authorize the transaction. When authorized (step **324**), the proxy management system secures funds (step **326**) from the consumer **54**, for example, by debiting a prepaid active account as discussed above. The proxy server **254** then transmits the surrogate number to the merchant server **258** (step **328**) which, upon receipt (step **330**), may proceed in accordance with the methodology following step **297** of FIG. **8**. The generation and the use of surrogate numbers give the proxy management system **252** the security of a conventional credit-card transaction while being valid only for a single transaction with a fixed amount and a short-term expiration date.

The consumer **54** utilizing the management system **250** may request a surrogate number to be generated in a particular amount. The prepaid account associated with the requesting consumer **54** may then be debited for the amount. The consumer **54** now has a valid credit-card number that he or she can use for a single online transaction with a merchant **56**. This feature of the invention gives a consumer **54** using the management system **250** the ability to make transactions at merchant web sites accepting credit cards, without the consumer **54** needing to use his or her own personal credit card. In addition, credit-card transactions can be made at web sites not necessarily directly supported by the aforementioned management system, or even if the consumer **54** does not have his or her own personal credit card. The consumer **54** uses the funds in the prepaid account.

The prepaid management system **52** as shown in FIG. **4** may also generate a surrogate number to be used as a refund or a cash-out method for the consumer **54** and his or her prepaid account. For example, the consumer **54** can request a refund for the balance remaining in a prepaid account (i.e., a cash out), rather than requesting the management system **52** to generate and send a check for the balance of funds in the account. The generation of a surrogate number is immediate and without delay. The consumer **54** may then use the surrogate number for any transaction that accepts conventional credit cards.

In addition to an online request as discussed above, the request for a surrogate number may be made remotely through, for example, a wireless application protocol (WAP) interface of the management system **52**. By utilizing a WAP interface, a surrogate number can be generated and used at a remote retail location, rather than at a dedicated merchant website. For example, with reference to FIG. **12**, a consumer **54** may use a wireless device such as a cellular telephone

to request a surrogate number (step **340**) for the total of a dinner tab at a restaurant. Upon receiving the request, the management system **52** may generate the surrogate number (step **342**), debit the consumer's active prepaid account (step **344**), and transmit the surrogate number to the consumer (step **346**). The consumer **54** receives the surrogate number wirelessly (step **348**) and provides the number to the merchant (step **350**) to complete the transaction. The merchant can then use the surrogate number analogously to a conventional credit-card transaction to complete the transaction (step **352**). Accordingly, a consumer **54** is able to complete transactions with a single-use credit-card number, with the funds being deducted from a prepaid account.

Transactions with Anonymous Shipping Addresses

When making transactions over the Internet **81**, a consumer **54** may desire to remain anonymous to the e-merchant **56**. Anonymity is difficult with regard to the shipping address of the consumer **54**. Although a post office address (i.e., a P.O. Box) provides a certain level of anonymity, the name of the post office box holder is public information and may be accessed. In addition, many e-merchants do not accept shipping addresses consisting of post office boxes.

According to the present invention, the anonymity of a consumer **54** making a transaction on the network **58** with a merchant **56** may be maintained. With reference to FIG. **13**, when initiating a purchase (step **354**), if anonymity is desired (step **356**), a consumer **54** may initiate a secure subsession (step **358**) with the management system **52**. When the subsession is initiated, the management system **52** generates an encoded address (step **360**).

The encoded address may be a unique address code stored in a database in the management system **52**, for example, in the active accounts database **138** (see FIG. **4**), and is associated with the actual shipping address of the consumer **54**. The encoded address may be based on consumer input and/or secure point in time information. Preferably, as shown in FIG. **14**, an encoded address **361** may includes actual information **362** and encoded information **363**. The actual information **362** may be the ZIP code of the actual shipping address of the consumer **54** so that the merchant **56** may calculate actual shipping charges. The encoded information **363** may be any type of information that is indecipherable to the merchant, for example, encrypt alphanumeric text. The management system **52** may generate an encoded address associated with a consumer **54** with an actual shipping address at the time the consumer **54** established a prepaid account.

Once generated by the management system **52**, the encoded address is provided to the e-merchant **56** (step **364**). The encoded address may be provided to the e-merchant **56** either

directly by the management system **52**. Alternatively, the management system **52** may provide the encoded address to the consumer **54** who, in turn, may provide the encoded address to the e-merchant **56**.

When initiating a purchase (step **354**), if anonymity is not desired (step **356**), the consumer **54** may provide his or her actual uncoded shipping address to the e-merchant **56** (step **365**). In either case, the e-merchant **56** receives the address provided (step **366**), be it either encoded or uncoded. The e-merchant **56** may then prepare the goods for shipping (after payment is secured as described above) and deliver the packaged goods to a shipper with the address received from either the consumer **54** or the management system **52** (step **368**). The shipper may be either a governmental postal service (e.g., the U.S. Postal Service) or a private carrier (e.g., United Parcel Service, FedEx, etc.)

When received, the shipper determines whether or not the address on the packaged goods is encoded (step **370**). This may be done visually or with, for example, an optical scanner. If the address is uncoded, then the goods may be shipped to the consumer **54** (step **372**) as usual. If the address is encoded, then the shipper may look up the actual shipping address associated with the encoded address (step **374**). The shipper may carry this out by querying the management system **52** which, in turn, may look up or retrieve the actual shipping address from a database and then transmit the same to the shipper. Alternatively, the management system **52** may provide the shipper with the encoded address and the actual shipping address after the encoded address is generated (at step **360**). The shipper may store the encoded address and associated actual shipping address in a database and maintain the database of a plurality of encoded addresses and associated actual shipping addresses. In either case, once the actual shipping address is obtained, the goods may be shipped (step **372**).

Those skilled in the art will understand that the present invention is not limited to the embodiments specifically illustrated in the drawings and described above. Rather, those skilled in the art will realize that the specific elements of the present invention may be modified and are capable of numerous alternatives without departing from the scope and spirit of the present invention. Accordingly, the scope of the present invention is determined by the terms of the appended claims and their legal equivalents and not by the specific exemplary embodiments shown and described herein.

CLAIMS

What is claimed is:

1. A method for managing a transaction on the Internet between a consumer and a merchant, the consumer having an actual shipping address, the method comprising:

a) receiving a query from the consumer to an anonymous transaction;

b) generating an encoded address for the transaction associated with the actual shipping address of the consumer;

c) providing to the merchant the encoded address; and

d) transmitting to a shipper the actual shipping address.

2. The method as claimed in claim 1 wherein step (d) comprises:

receiving a query from the shipper including the encoded address;

retrieving the actual shipping address associated with the encoded address; and

transmitting the retrieved actual shipping address to the shipper.

3. The method as claimed in claim 1 wherein step (d) comprises:

transmitting to the shipper the encoded address and the actual shipping address.

4. The method as claimed in claim 1 further comprising:

repeating steps (a) through (d).

5. The method as claimed in claim 1 further comprising:

maintaining a database including a plurality of encoded addresses.

6. The method as claimed in claim 5 wherein step (b) comprises:

establishing a prepaid account with the consumer;

7. A method for carrying out a transaction on the Internet by a consumer with a merchant with anonymity, the merchant having a merchant web site, the consumer having an actual shipping address, the method comprising:

a) initiating a purchase on the merchant web site with the merchant;

b) causing a encoded address associated with the actual shipping address to be generated;

c) causing the encoded address to be provided to the merchant; and

d) causing the actual shipping address to be provided to a shipper.

8. A method for shipping goods purchased by a consumer from a merchant over the Internet, the consumer having an actual shipping address, the method comprising:

a) receiving an encoded address associated with the actual shipping address;

b) retrieving the actual shipping address associated with the encoded address; and

c) shipping the goods to the actual shipping address.

9. The method as claimed in claim **8** further comprising:

storing the received encoded address into a database.

10. A method for carrying out a transaction on the Internet by a consumer with a consumer with anonymity, the consumer having an actual shipping address, the method comprising:

a) receiving an encoded address associated with the actual shipping address; and

b) delivering packaged goods associated with the transaction with the encoded address to a shipper.

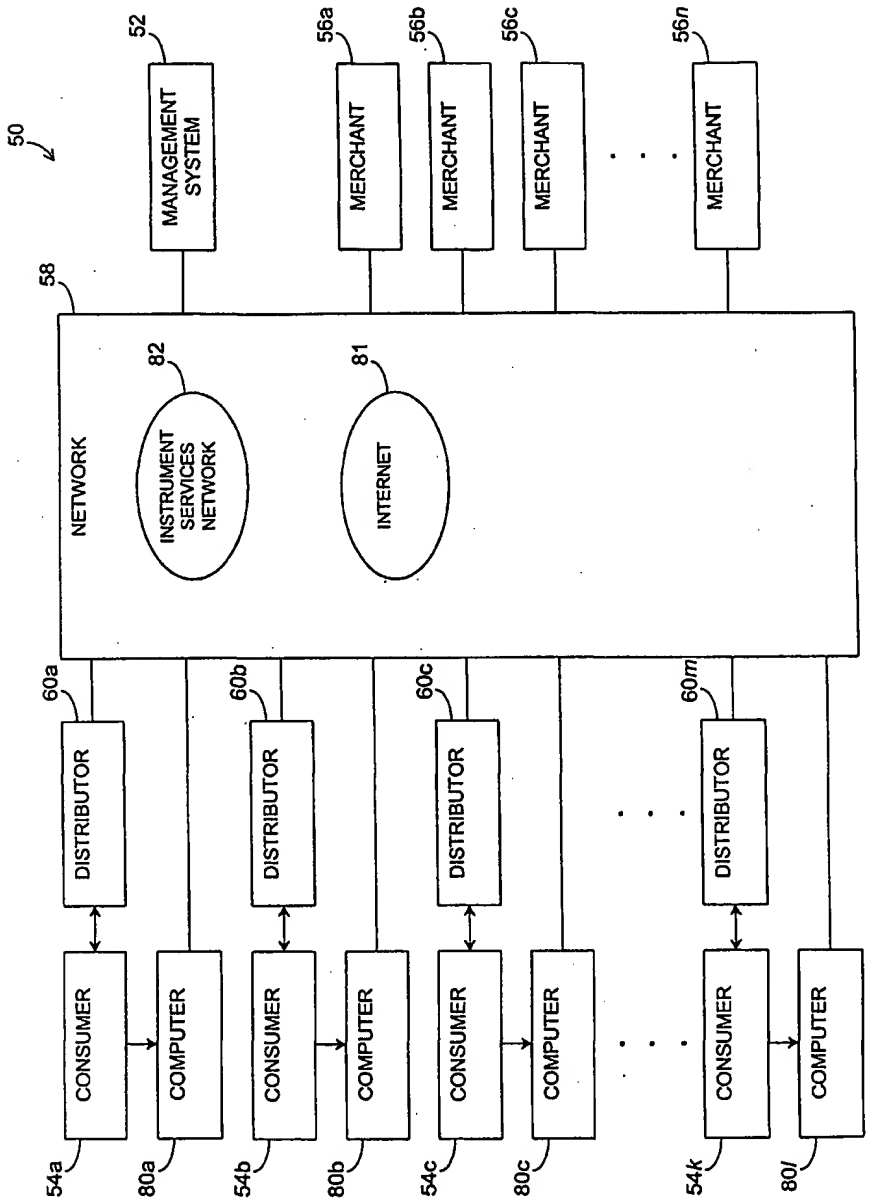
50
52
MANAGEMENT SYSTEM
56a
MERCHANT
56b
MERCHANT
56c
MERCHANT
56n
MERCHANT
58
NETWORK
82
INSTRUMENT SERVICES NETWORK
81
INTERNET
60a
DISTRIBUTOR
60b
DISTRIBUTOR
60c
DISTRIBUTOR
60m
DISTRIBUTOR
CONSUMER
COMPUTER
54a
80a
54b
80b
54c
80c
54k
80l

FIG. 1

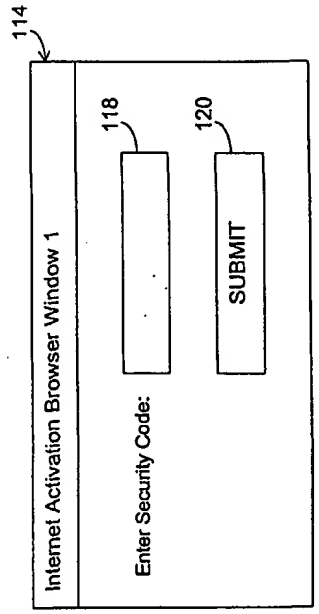

FIG. 5A

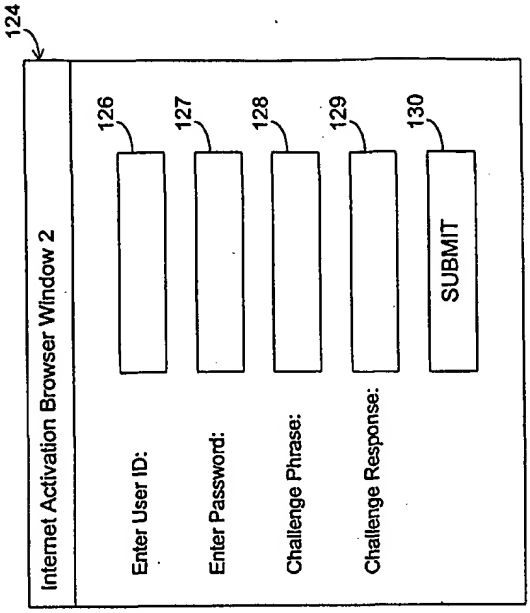

FIG. 5B

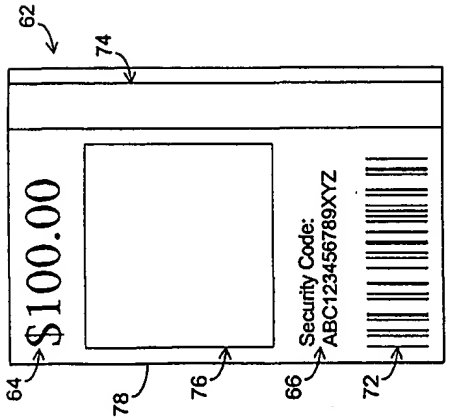

FIG. 2

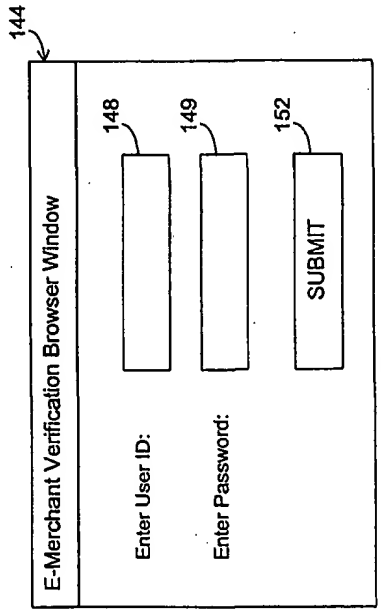

FIG. 6

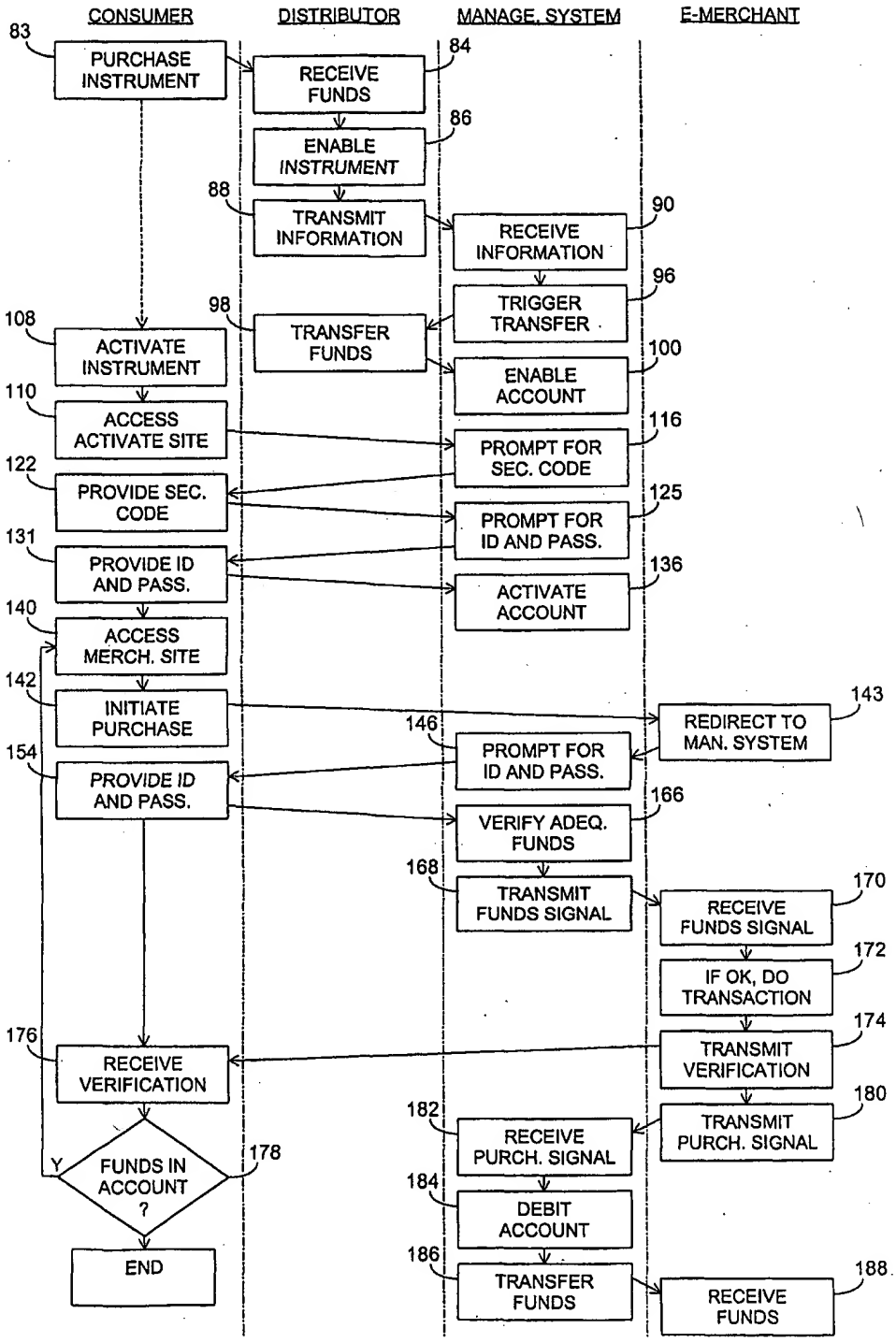
CONSUMER
DISTRIBUTOR
MANAGE. SYSTEM
E-MERCHANT
83
PURCHASE INSTRUMENT
84
RECEIVE FUNDS
86
ENABLE INSTRUMENT
88
TRANSMIT INFORMATION
90
RECEIVE INFORMATION
96
TRIGGER TRANSFER
98
TRANSFER FUNDS
100
ENABLE ACCOUNT
108
ACTIVATE INSTRUMENT
110
ACCESS ACTIVATE SITE
116
PROMPT FOR SEC. CODE
122
PROVIDE SEC. CODE
125
PROMPT FOR ID AND PASS.
131
PROVIDE ID AND PASS.
136
ACTIVATE ACCOUNT
140
ACCESS MERCH. SITE
142
INITIATE PURCHASE
143
REDIRECT TO MAN. SYSTEM
146
PROMPT FOR ID AND PASS.
154
PROVIDE ID AND PASS.
166
VERIFY ADEQ. FUNDS
168
TRANSMIT FUNDS SIGNAL
170
RECEIVE FUNDS SIGNAL
172
IF OK, DO TRANSACTION
174
TRANSMIT VERIFICATION
176
RECEIVE VERIFICATION
180
TRANSMIT PURCH. SIGNAL
182
RECEIVE PURCH. SIGNAL
Y
FUNDS IN ACCOUNT ?
178
184
DEBIT ACCOUNT
186
TRANSFER FUNDS
188
RECEIVE FUNDS
END

FIG. 3

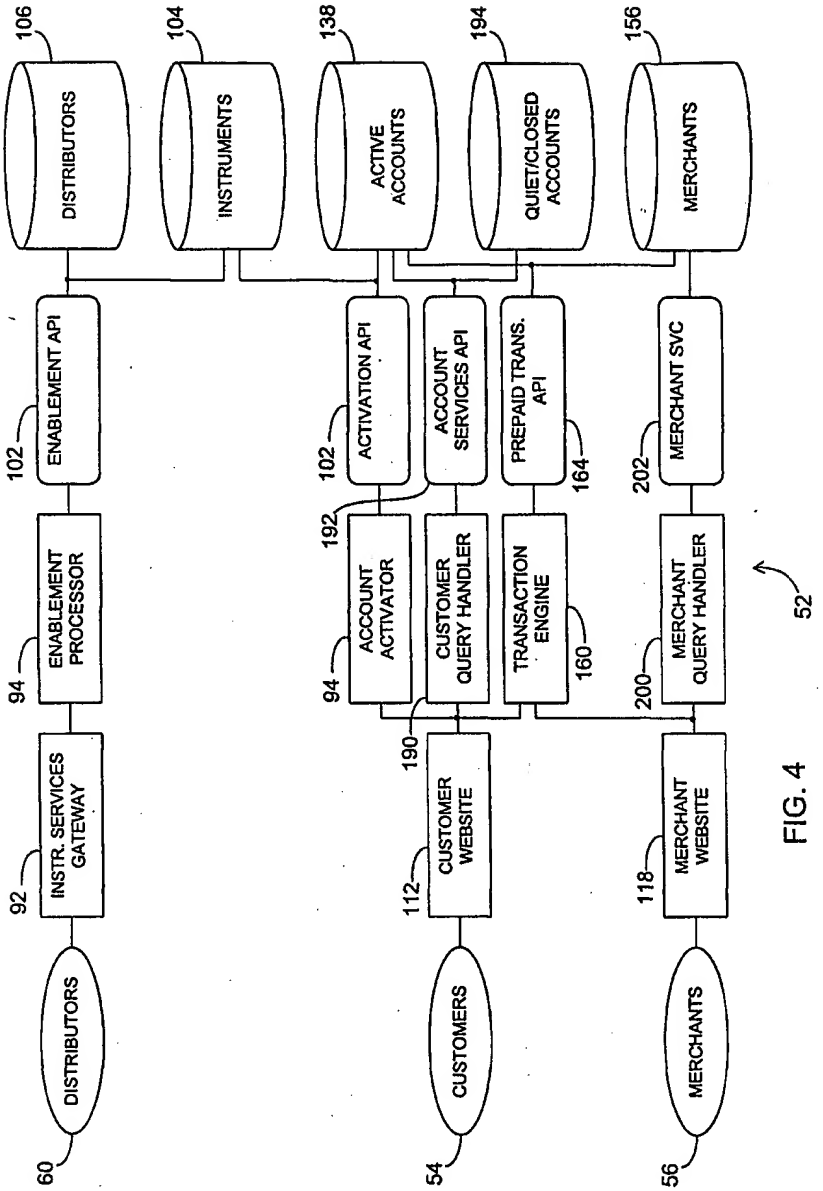
106
DISTRIBUTORS
104
INSTRUMENTS
138
ACTIVE ACCOUNTS
194
QUIET/CLOSED ACCOUNTS
156
MERCHANTS
102
ENABLEMENT API
102
ACTIVATION API
ACCOUNT SERVICES API
PREPAID TRANS. API
164
202
MERCHANT SVC
192
94
ENABLEMENT PROCESSOR
94
ACCOUNT ACTIVATOR
CUSTOMER QUERY HANDLER
TRANSACTION ENGINE
160
200
MERCHANT QUERY HANDLER
52
190
92
INSTR. SERVICES GATEWAY
112
CUSTOMER WEBSITE
118
MERCHANT WEBSITE
DISTRIBUTORS
60
CUSTOMERS
54
MERCHANTS
56

FIG. 4

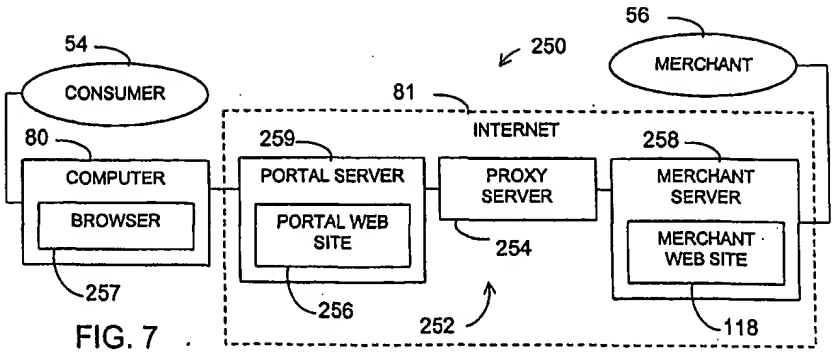

FIG. 7

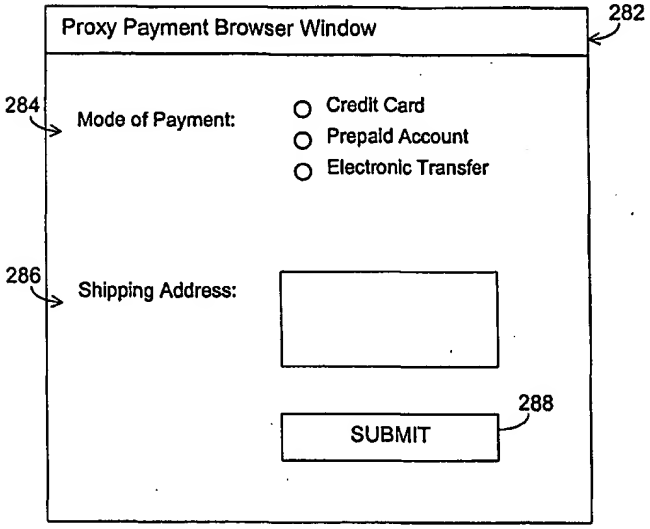

FIG. 9

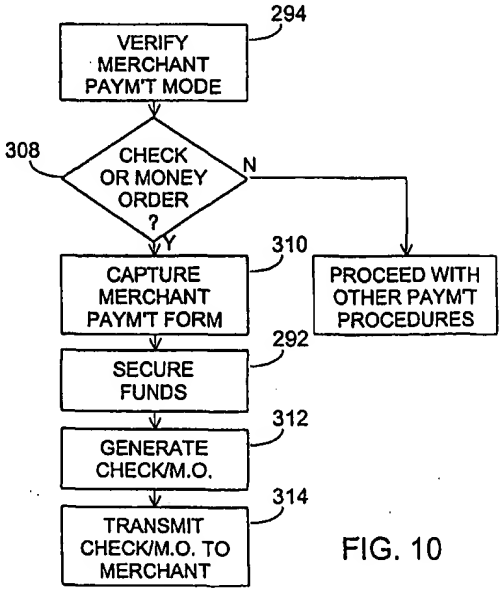

FIG. 10

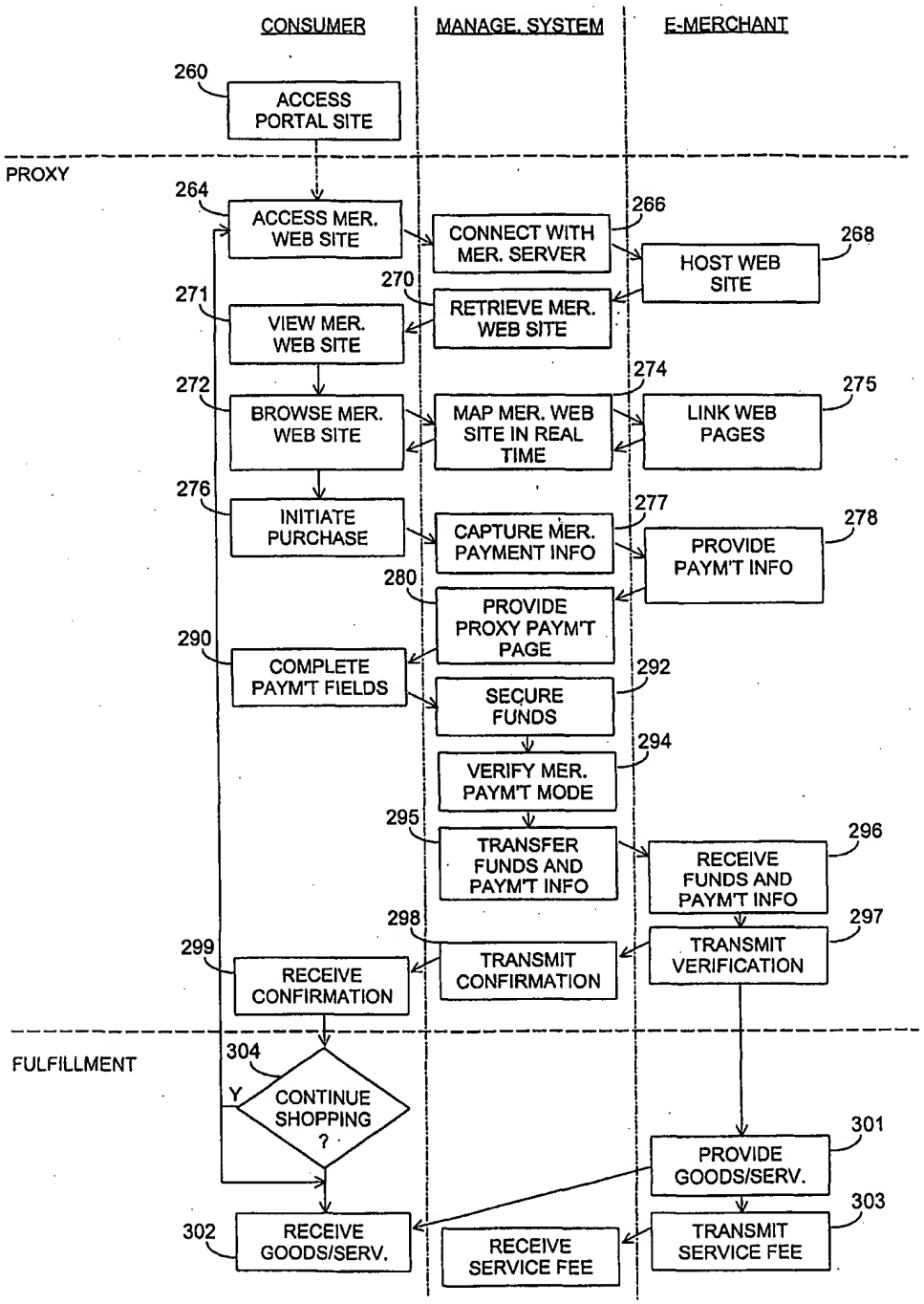
CONSUMER
MANAGE. SYSTEM
E-MERCHANT
260
ACCESS PORTAL SITE
PROXY
264
ACCESS MER. WEB SITE
266
CONNECT WITH MER. SERVER
268
HOST WEB SITE
270
RETRIEVE MER. WEB SITE
271
VIEW MER. WEB SITE
272
BROWSE MER. WEB SITE
274
MAP MER. WEB SITE IN REAL TIME
275
LINK WEB PAGES
276
INITIATE PURCHASE
277
CAPTURE MER. PAYMENT INFO
278
PROVIDE PAYM'T INFO
280
PROVIDE PROXY PAYM'T PAGE
290
COMPLETE PAYM'T FIELDS
292
SECURE FUNDS
294
VERIFY MER. PAYM'T MODE
295
TRANSFER FUNDS AND PAYM'T INFO
296
RECEIVE FUNDS AND PAYM'T INFO
297
TRANSMIT VERIFICATION
298
TRANSMIT CONFIRMATION
299
RECEIVE CONFIRMATION
FULFILLMENT
304
CONTINUE SHOPPING ?
Y
301
PROVIDE GOODS/SERV.
303
TRANSMIT SERVICE FEE
302
RECEIVE GOODS/SERV.
RECEIVE SERVICE FEE

FIG. 8

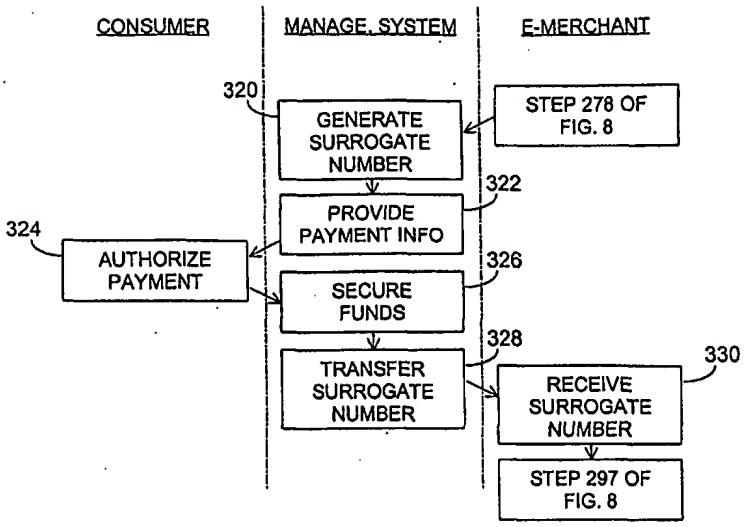
CONSUMER
MANAGE. SYSTEM
E-MERCHANT
320
GENERATE SURROGATE NUMBER
STEP 278 OF FIG. 8
322
PROVIDE PAYMENT INFO
324
AUTHORIZE PAYMENT
326
SECURE FUNDS
328
TRANSFER SURROGATE NUMBER
330
RECEIVE SURROGATE NUMBER
STEP 297 OF FIG. 8

FIG. 11

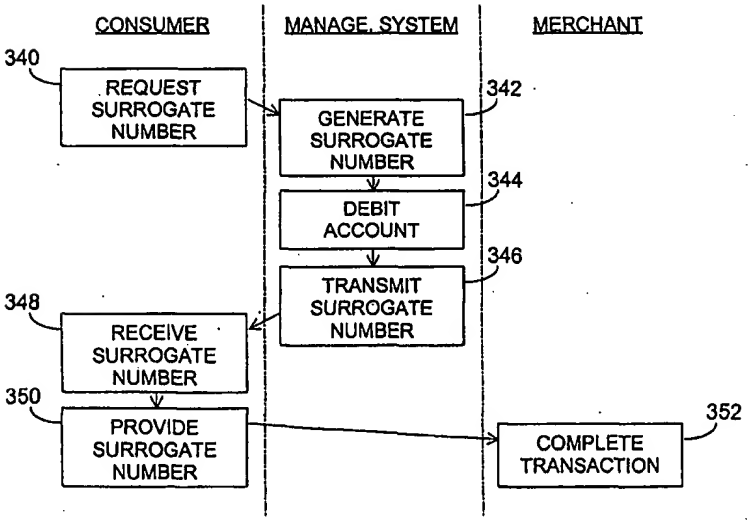
CONSUMER
MANAGE. SYSTEM
MERCHANT
340
REQUEST SURROGATE NUMBER
342
GENERATE SURROGATE NUMBER
344
DEBIT ACCOUNT
346
TRANSMIT SURROGATE NUMBER
348
RECEIVE SURROGATE NUMBER
350
PROVIDE SURROGATE NUMBER
352
COMPLETE TRANSACTION

FIG. 12

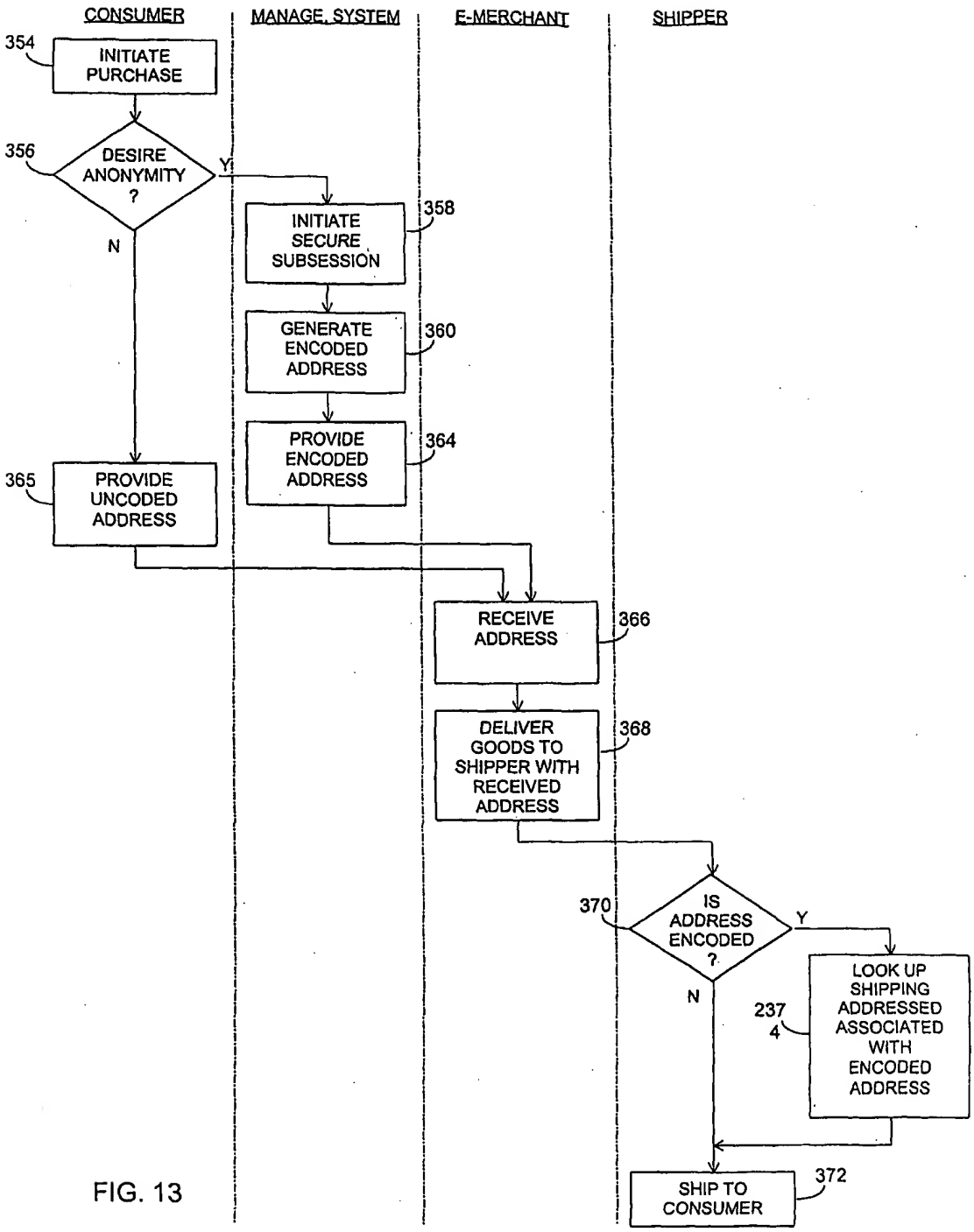
CONSUMER
MANAGE. SYSTEM
E-MERCHANT
SHIPPER
354
INITIATE PURCHASE
356
DESIRE ANONYMITY ?
Y
N
358
INITIATE SECURE SUBSESSION
360
GENERATE ENCODED ADDRESS
364
PROVIDE ENCODED ADDRESS
365
PROVIDE UNCODED ADDRESS
366
RECEIVE ADDRESS
368
DELIVER GOODS TO SHIPPER WITH RECEIVED ADDRESS
370
IS ADDRESS ENCODED ?
Y
N
237
4
LOOK UP SHIPPING ADDRESSED ASSOCIATED WITH ENCODED ADDRESS
372
SHIP TO CONSUMER

FIG. 13

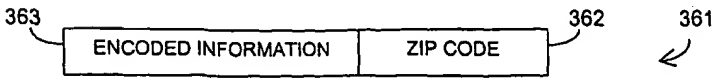
363
ENCODED INFORMATION
ZIP CODE
362
361

FIG. 14